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Managing A Case Of Grade 3 Gynaecomastia By A Single-Stage Liposuction And Circumareolar Skin Reduction Technique

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Abstract
Gynecomastia is abnormal enlargement of the breast tissue especially in adolescent and adult males. Grade 3 gynaecomastia of Simon's classification has excess skin, enlarged areola, and displaced nipple. Although harmless, it is a source of embarrassment and psychological distress is the main indication for surgical treatment. An ideal surgical treatment aims to reduce the breast size by resecting excessive glandular tissue, adipose tissue, and excess skin, to attain an acceptable breast shape, relocate the nipple-areolar complex, and minimize scars. The problem of tissue excess and breast displacement in high grade gynaecomastia can be well managed by this combined technique of liposuction and circumareolar skin reduction to achieve a scar-less flat male chest.
Keywords: *Gynaecomastia, Liposuction, Skin Reduction Surgery, Complications*

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I. Introduction

Gynaecomastia is the most common benign breast pathology among males and it causes considerable amount of emotional distress, psychological and social discomfort which compels them to seek treatment. (1-3) It is the increase of fibroglandular tissue in the male breast by more than 2cm, which can be palpated under the nipple-areolar complex. (4) Although the global incidence of gynaecomastia is 32%–36%, the recent prevalence has increased to 50%–70%. (4-8) The condition is caused by an increase in the effective oestrogen-testosterone ratio, which could either be physiological or pathological. (9) In most cases of physiological gynecomastia reassurance is needed. High-grade gynaecomastia (Simon grade IIb & III) has the problem of skin excess along with enlarged and displaced nipple-areola complex, for which surgery is the only option. Previous techniques as in breast amputation with free nipple-areolar grafting had high complication rates of graft necrosis. Minimal scar techniques like subcutaneous mastectomy through a peri-areolar incision and liposuction assisted gynaecomastia reduction is ideal for low-grade (Simon grade I and IIa) gynaecomastia.To overcome these problems, this combined circumareolar skin excision and liposuction technique achieves a good aesthetic result.The different amounts of adipose tissue, parenchyma, and skin redundancy are paramount in selecting patients and planning surgical strategies. (10,11) An ideal surgical approach aims to reduce the breast size with an acceptable breast shape, resect excessive glandular tissue and skin, and avoid scars. (12-14)

II. Case Report

35 year old gentleman presented to our department with complaints of enlargement of both breasts since 4 years. He was apparently normal 4 years ago following which he noticed a small enlargement of both the breasts. It was spontaneous in onset and gradually progressed to the present size. He gives history of occasional pain but no history of trauma, prolonged medication especially with anabolic steroids and testicular swelling. On

examination, there was bilateral grade 3 gynaecomastia. There was moderate ptosis of the breasts with downward-faced nipples. There was no axillary lymphadenopathy. A diagnosis of idiopathic bilateral Simon's grade 3 gynaecomastia was made. Ultrasound showed enlarged breasts with fatty and glandular tissue suggestive of gynaecomastia. We proceeded for surgery under general anaesthesia. Under tumescent infiltration, liposuction was done. The redundant skin excess was excised in a crescentic manner in the circumareolar region. About 2.5cm of areola was de-epithelised and the gland was excised with sharp dissection. Haemostasis was secured and purse-string sutures were applied with 3-0 nylon over suction drain. Similar procedure was repeated on the opposite side. Compression dressing was applied and specimen was sent for histopathology which showed features suggestive of gynaecomastia. Post-operative was uneventful and he was on regular follow-up.

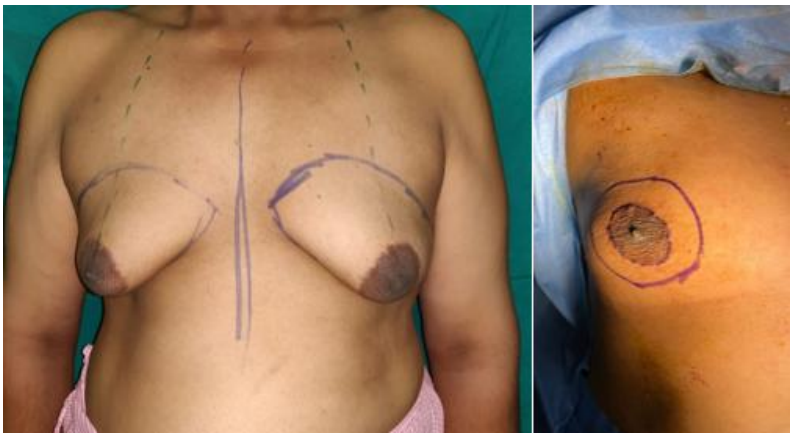

Fig. 1 – Clinical Picture Showing Bil Grade 3 Gynaecomastia
Fig. 2 – Area Marked For De-Epithelialisation

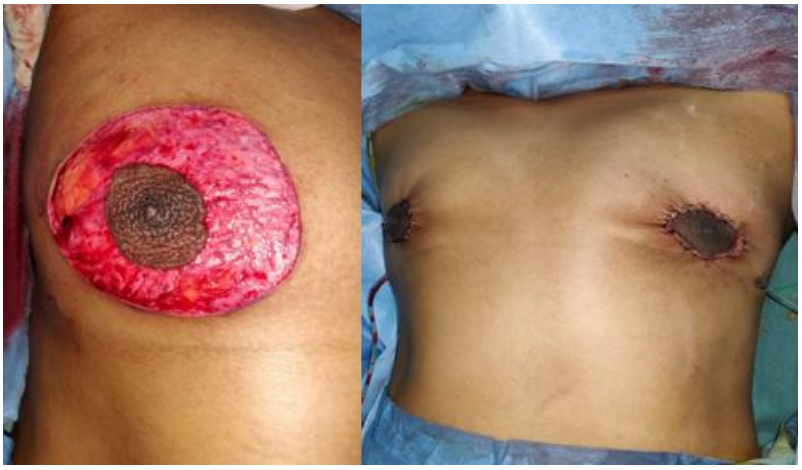

Fig. 3 – Photograph After De-Epithelialisation

Fig. 4 – Immediate Post-Operative Picture

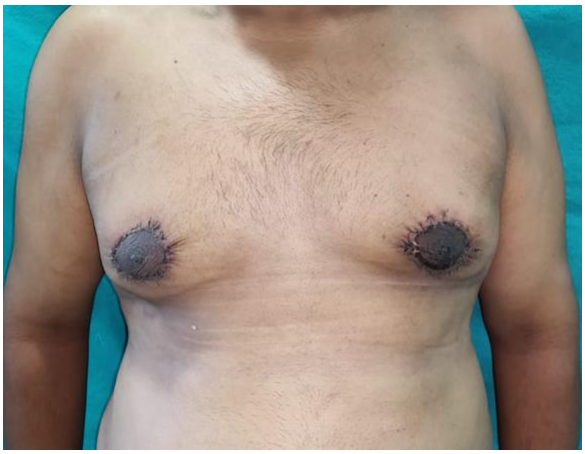

Fig. 5 – Late Follow-Up Photograph

III. Discussion

Gynaecomastia is the benign proliferation of the ductal tissue, stroma, and fat in the male breast and is due to the imbalance between estrogens and androgens, but in most cases the etiology in unknown. (15) Obesity has been shown to have a definitive correlation with gynaecomastia (16). Surgical therapy is indicated for long-standing gynaecomastia, at least more than 18 months, which is unlikely to subside spontaneously or with medication. (16) The critical problem in the correction of gynaecomastia is the excess amount of skin and the residual scar.(17) Simon *et al*. divided gynaecomastia into four grades as follows: (10)

- Grade I: Small visible breast enlargement- no skin redundancy
- Grade IIa: Moderate breast enlargement without skin redundancy
- Grade IIb: Moderate breast enlargement with skin redundancy
- Grade III: Marked breast enlargement with marked skin redundancy

In 2003 Rohrich proposed a new classification of gynecomastia based on the amount of breast hypertrophy and the degree of ptosis; grade I patients having minimal hypertrophy; grade II patients having moderate hypertrophy; grades III and IV patients having severe hypertrophy; grade III patients exhibiting grade 1 ptosis, and grade IV patients exhibiting grades 2 or 3 ptosis. (18) Rohrich treated all grades successfully with ultrasound-assisted liposuction technique with delayed excision of excess skin in order to minimize scarring.

Management of high-grade gynaecomastia has evolved a lot. Malbec in 1945 suggested Breast amputation with free nipple-areolar graft for management of breast ptosis and skin excess was suggested by Malbec but there were complications of total loss of the free graft, hypoesthesia of the nipple-areolar complex or hypertrophic scars over chest. (19) Later, preservation of nipple-areolar complex was done on a de-epithelised flap, inferior pedicle reduction technique, horizontal ellipse with superior pedicel flap, bipedicle flap, etc were described to keep the neuro-vascular supply of the NAC complex intact, but these surgical techniques usually produce scars over male chest, which is aesthetically unappealing. (20-23) Leon Dufourmentel in 1928 and Jerome Webster in 1946 described scarless techniques of subcutaneous mastectomy through an intra-areolar incision of gynaecomastia. With this technique, the hypertrophied gland could be removed without leaving a significant scar, but not in cases of grade III gynaecomastia. (24,25) Tashkandi *et al*. described single-stage subcutaneous mastectomy and circumareolar concentric skin reduction with de-epithelialisation in high-grade gynaecomastia (Simon's grade III) but the main disadvantage of the technique was the mild residual skin redundancy. (26) In recent years, liposuction assisted gynaecomastia management has been described giving a good result in grade I and grade IIa gynaecomastia. (27,28) For grade 3 gynaecomastia, authors like Persichetti *et al*. and others had described circumareolar skin reduction with purse-string suturing technique to reduce the skin and areolar excess. (29-31)

In our case, along with liposuction we used the circumareolar skin reduction technique to reduce skin excess. The simultaneous use of liposuction decreases the breast volume, so the breast disk can be removed through a very small incision. This small incision preserves best the subdermal neurovascular plexus of the nipple-areola complex, which if injured, may lead to hypoesthesia or necrosis of nipple-areola complex. Along this, we have kept a minimum of 1.5-2 cm sub areolar tissue during breast disk excision, which helps to decreases the chance of 'saucer deformity'. (32) Liposuction of breast covers a large area from clavicle to the inframammary fold and hence it gives a better contour of the chest. Repositioning of the infero-medially displaced nipple-areola complex in high grade gynaecomastia is done by fixing the nipple-areolar complex in its anatomical position with pectoralis fascia, which decreases the chance of displacement. Normal position of the nipple-areola complex in male is 4th intercostal space or the mid-humerus level medial to the mid-clavicular line. (33)

IV. Conclusion

The technique of the combination of liposuction and skin reduction is minimally invasive, reduced blood loss and gives a scar less appearance to the male chest. Gynecomastia surgery is a rewarding and saves life of many youngsters who are in depression due to this social stigma. and who developed suicidal thoughts or ideation. Breast reduction like circum-concentric technique, Lejour's technique, superomedial pedicle technique, inferior central pedicle technique or sometimes elliptical excision with free nipple graft technique is required in very severe cases.

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